UNRAVELLING TERBY'S TURBULENT PAST. T. J. Parker, Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA, timothy.j.parker@jpl.nasa.gov.

Terby is a 170 kilometer crater inside the north rim of Hellas Planitia.

The crater contains a thick sequence of layered sedimentary material in two large "remnant" ridges that jut inward from the crater's north rim. The flanks of these ridges expose as much as 2000 meters or more of layered material. Access to these sediments necessitates that the MSL landing site be a "go to" site, as the layered ridges themselves aren't extensive enough to contain a 20 km landing ellipse.

Two potential sites are proposed, and although both are go to sites, the surfaces on which they are located have a high probability of being comprised of sedimentary material. Small valleys drain into Terby from the north and east, and one small valley exits the crater at the lowest point in it's south rim, implying a lake within the crater.

The first site would place the ellipse in a broad, flat-floored depression in the floor of Terby and adjacent to the end of one of the layered ridges. The base of the ridge is inside the ellipse, thus requiring a drive of less than 10 km for access to the layered exposures. Traversing to the base of the exposure to the north-northeast, then along the base northward should allow access to progressively higher strata in the section, with the possibility of a route to the top of the ridge about 15-20 km north of the center of the landing ellipse.

The second landing ellipse is on an alluvial fan just inside Terby's north-northwest rim, having been fed by numerous small valleys (larger than "gullies") originating in a 20 km crater on Terby's north rim. Access to the layered ridge deposits would require a traverse of more than 20 kms, however.

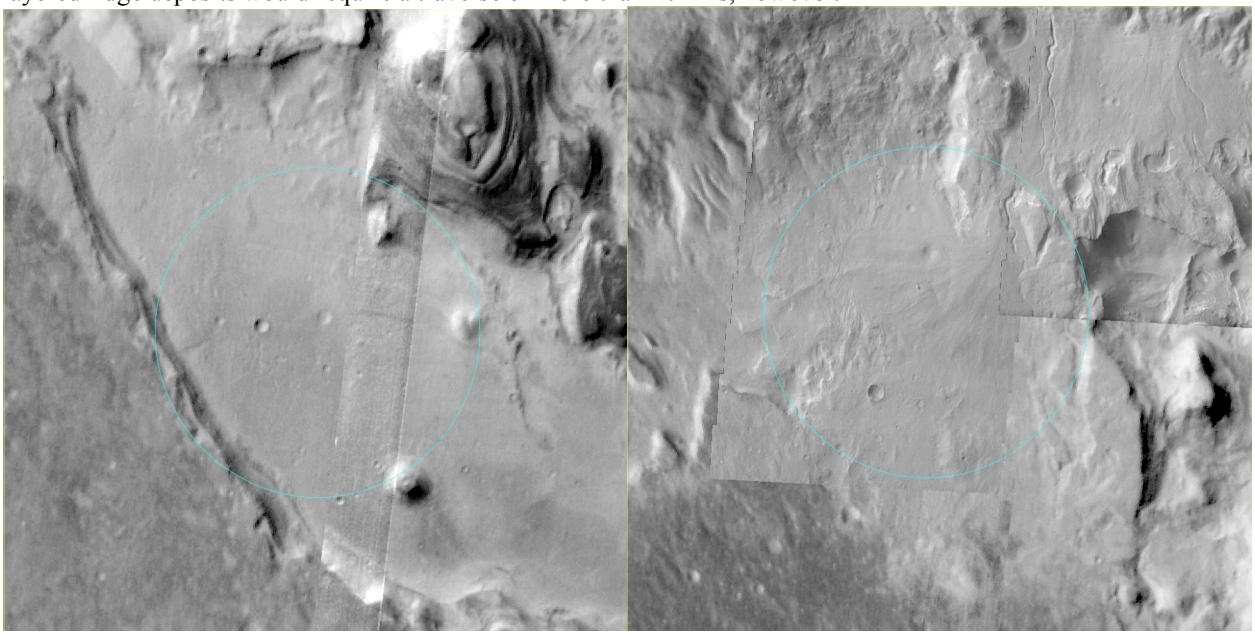

Figure 1: Two proposed landing ellipses within Terby Crater. Landing ellipses in cyan. Background image map for first site - THEMIS daytime IR. Background image map for 2nd site – THEMIS daytime IR and THEMIS VIS.

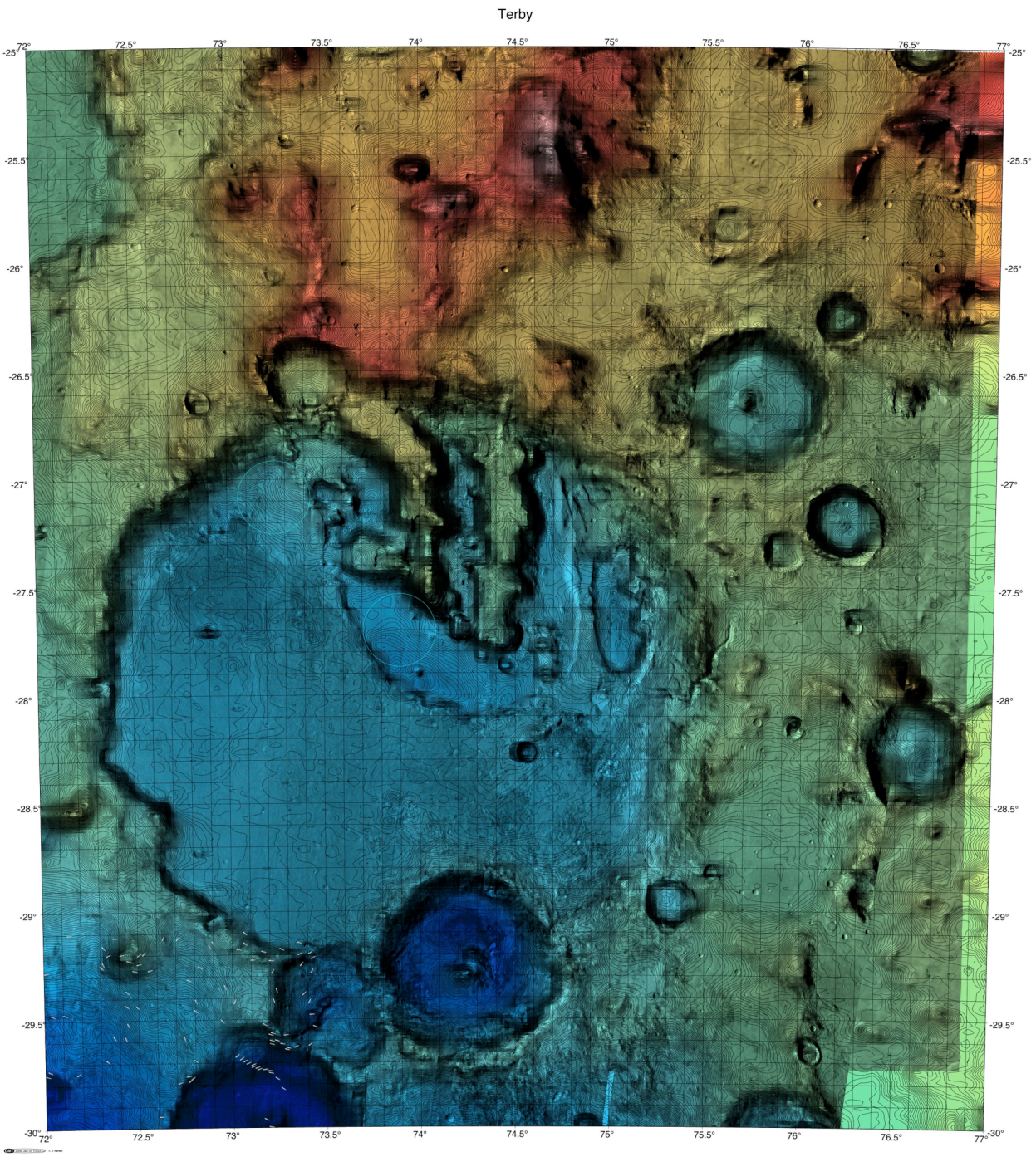

Figure 2: Topography of Terby Crater. Landing ellipses in cyan. MOLA topography, Transverse Mercator projection. Background image map – MDIM2 and THEMIS daytime IR.